No. of Printed Pages : 4

ET-581(A)

B.Tech. Civil (Construction Management)

Term-End Examination

00259

June, 2014

ET-581(A) : TESTING FOR QUALITY CONTROL

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks.*

1. (a) Fill in the blanks in the following : $6 \times 1\frac{1}{2} = 9$

(i) The percentage by weight of particles whose greatest dimension (length) is greater than 1·8 times their mean dimensions, is called as _____ index of aggregate.

(ii) In the determination of fineness of cement by sieving, the cement is sieved through _____ micron IS sieve.

(iii) The aggregate impact value of coarse aggregate should not be more than _____ percent for concrete used for other than wearing surface.

(iv) The base diameter of the mould used for slump test is _____ mm.

(v) The minimum number of samples as per requirement of quality control shall be _____ if quantity of concrete is more than 15 m^3 and less than 31 m^3.

(vi) To determine soundness of cement by Le-Chatelier method, cement is gauged with _____ times the water required for standard consistency.

(b) Explain briefly any ***two*** of the following : $2 \times 2\frac{1}{2} = 5$

(i) Chemical method test for determination of Alkali Aggregate Reactivity

(ii) Soundness of aggregates

(iii) Necessity for testing cement for its heat of hydration

2. Differentiate between any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Cylindrical and Cube strength of concrete

(b) Cold immersion and Boiling water tests of plywood

(c) Double punch test and Ring tension test

(d) Rebound and Indentation principles of evaluation of surface hardness

(e) Aggregate crushing value and Aggregate impact value

3. (a) Describe the procedure to determine the fineness by specific surface of a cement sample by Blaine Air Permeability. Discuss the significance of the test. 7

(b) Discuss briefly the procedure to determine the compressive strength of cement. 7

4. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Bulking of sand

(b) Alkali Aggregate Reaction

(c) Segregation and Bleeding of concrete

(d) Acceptance criteria of concrete

(e) Determination of corrosion of Reinforcement Bar

5. Describe any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Factors affecting compressive strength of concrete

(b) Ultrasonic pulse velocity test

(c) Permeability test for clay roofing tiles

(d) Estimation of deleterious material and organic impurities in an aggregate sample

(e) Los Angeles Abrasion Test

6. (a) Discuss test for performance of an admixture in concrete mix. 7

(b) Describe the procedure to determine compressive strength of concrete. 7

7. (a) Discuss significance of grading of aggregates in a concrete mix. 7

(b) Explain the factors affecting workability. 7